



STREPTOCOCCUS PNEUMONIAE, INVASIVE

What is *Streptococcus pneumoniae*?

Streptococcus pneumoniae is a bacterium commonly found in the nose and throat. The bacterium can sometimes cause severe illness in children, the elderly, and other people with weakened immune systems. *Streptococcus pneumoniae* is the most common cause of bloodstream infections, pneumonia, meningitis, and middle ear infections in young children as well as pneumonia in immunocompromised individuals and the elderly. *Streptococcus pneumoniae* bacteria, or pneumococcus, can cause many types of illnesses. Some of these illnesses can be life-threatening.

Streptococcus pneumoniae is considered "invasive" when it is found in the blood, spinal fluid, or other normally sterile sites. Pneumococcal bacteria can invade the bloodstream, causing bacteremia, and the tissues and fluids surrounding the brain and spinal cord, causing meningitis. When this happens, disease is usually very severe, requiring treatment in a hospital and even causing death in some cases. It most often occurs when there is a predisposing condition such as pulmonary disease.

Who gets *Streptococcus pneumoniae*?

Anyone can get pneumococcal disease. Those at increased risk are people who are of a certain age, who have certain medical conditions, and adults who smoke.

Children younger than two years old and adults 65 years and older are at increased risk for pneumococcal disease if they have:

- chronic heart, lung, or kidney diseases
- cerebrospinal fluid leak
- cochlear Implant
- diabetes
- HIV, cancer, solid organ transplant, or immunosuppressive conditions
- Nephrotic Syndrome
- sickle cell disease, a damages spleen or no spleen

How is *Streptococcus pneumoniae* spread?

Streptococcus pneumoniae is spread from person to person when someone inhales or has direct contact with the respiratory droplets (e.g. coughing, sneezing) from an infected person. It is not known why certain individuals develop invasive *Streptococcus pneumoniae* disease while others do not. Some people, especially children, carry the bacteria in their nose or throat without becoming ill. Doctors do not know why "carriers" rarely get sick.



What are the symptoms of *Streptococcus pneumoniae*?

Pneumococcal disease can include many different [types of infections](#). Symptoms depend on the part of the body that is infected. Most pneumococcal infections are mild. However, some can be deadly or result in long-term problems. Common symptoms include fever, chills, headaches, cough, chest pain difficulty breathing, and confusion.

How soon do symptoms appear?

The incubation period is thought to range from one to four days. Symptoms can vary, depending on location of the infection.

Should an infected person be excluded from work or school?

There is not a current recommendation for infected persons to be excluded from work or school unless their symptoms prevent them.

What is the treatment for *Streptococcus pneumoniae*?

Doctors use antibiotics to treat pneumococcal disease. However, some pneumococcal bacteria have become resistant to certain antibiotics used to treat these infections.

What can a person or community do to prevent the spread of *Streptococcus pneumoniae*?

The best way to prevent the spread of the bacteria is to cover your mouth when coughing or sneezing and frequently and thoroughly washing your hands. A pneumococcal vaccine is recommended for individuals who are immunocompromised, age 65 and older, ages 19 through 64 years who smoke cigarettes or who have asthma, and adults living in nursing homes or long-term care facilities. Recently the vaccine was approved for use in children under 2 years.

Persons having close physical contact with a patient infected with invasive *Streptococcus pneumoniae* outside of the health care setting should keep their hands clean by washing thoroughly with soap and water. When visiting a friend or family member with an invasive *Streptococcus pneumoniae* infection inside a health care facility, follow the facility's infection control recommendations.

Resources

Centers for Disease Control and Prevention,
<https://www.cdc.gov/pneumococcal/index.html> and
<http://www.cdc.gov/handwashing/when-how-handwashing.html>

Heymann, D. (2015). Pneumonia. In D. Heymann (Ed.), *Control of communicable diseases manual* (20th ed., pp. 465-469) APHA Press.

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